

### REMARKS

This document is responsive to the Office Action dated October 24, 2001. A Petition for a One (1) Month Extension of Time with the appropriate fee is provided herewith.

Please charge any additional fees or deposit any overpayment to our Deposit Account No. 19-1995. A copy of this letter is enclosed for that purpose.

Claims 1-32 are pending in the patent application. Claim 1 was rejected under 35 USC 102(b) as being anticipated by Muratani et al (US Patent No. 6,061,451). Claims 2-32 were rejected under 35 USC 103(a) as being unpatentable over Muratani in view of Menezes, Handbook of Applied Cryptography.

The Applicant has carefully reviewed the Patent Office's reasons for rejection of the claims. The rejection of claims is respectfully traversed for the following, and other, reasons. Re-examination and allowance of all claims are respectfully requested.

#### Rejection of Claim 1 under 35 USC 102(b)

The rejection of Claim 1 as anticipated by Muratani is respectfully traversed, because Claim 1 includes limitations not taught or suggested by Muratani. For example, in Claim 1, it is clearly specified that a digital signal is processed as follows:

- (a) encoding the digital signal to obtain an encoded signal;
- (b) converting the encoded signal into a copy protected signal using a copy protection function, wherein the function utilizes a data signal representing copy protection data; and
- (c) scrambling the copy protected signal to obtain a scrambled signal.

This generates an encoded, copy protected and scrambled signal.

Referring to FIGs. 2-3 and Col. 5, line 9 to Col. 6, line 11, Muratani shows receiving a first scrambled signal (scrambled according to first scrambling system (Sa)), into a receiver (set top unit) 50. The first scrambled signal is scrambled again according to a second scrambling system (Sb), using scrambler 54 in the receiver 50. The double-scrambled signal is sent to security module 70, where it is once descrambled according to the first scrambling system (Da). Then, the once-descrambled signal is sent back to the receiver 50 where it is descrambled again in the descrambler circuit 56 according to the second scrambling system (Db), to obtain display data.

The Office Action refers to FIG. 3 of Muratani as disclosing a second scrambling function, subsequent to the first. It is respectfully submitted that, according to Muratani, Col. 6, lines 12-29, an incoming scrambled signal Sa(M) (scrambled by a scrambler 42 in a server 40) is received by the receiver 50, and then this scrambled signal is

scrambled again (Sb) in the receiver 50. Muratani does not teach the three steps according to Claim 1 of: (a) encoding a digital signal, (b) converting the encoded signal into a copy protected signal using copy protection function using a copy protection signal, and (c) scrambling the copy protected signal into a scrambled signal. Muratani simply teaches receiving a scrambled signal (Sa) and then scrambling it again (Sb). As such, it is respectfully requested that the rejection of Claim 1 be withdrawn.

#### Rejection of Claims 2-32 under 35 USC 103(a)

Claims 2-32 were rejected under 35 USC 103(a) as being unpatentable over Muratani in view of Menezes. The rejections are respectfully traversed because the claimed invention includes limitations not taught or suggested by the references alone, or in combination. No prima facie case of obviousness has been established.

Muratani is directed to a data receiving apparatus as a set top unit connected to a network and a security module. Digital video data which is supplied from the network and scrambled according to a first system is scrambled according to a second system in a scramble circuit in the set top unit, and is supplied to the security module. The data is descrambled according to the first system in a descramble circuit in the security module, and is transferred back to the set top unit. The data is descrambled according to the second system in a descramble circuit in the set top unit, and is outputted to an image display terminal via an MPEG decoder.

As stated above, Muratani does not show or even suggest limitations of claim 1. Further, as the Office Action also states, Muratani does not teach or suggest transmitting copy protection data to a receiver along with an encoded, copy protected and scrambled signal.

Menezes suggests double and triple encryption on page 234, and further a sender Alice sending encrypted data and encryption key to a receiver Bob. However, Menezes sends a once-encrypted data to a receiver over a first channel (unsecured channel) and sends the encryption key (e) to the receiver over a secure channel. This is unrelated to the claimed invention wherein an encoded, copy protected and scrambled signal are sent to a receiver with a copy protection data signal (Claim 2).

The references do not show or suggest sending an encoded, copy protected and scrambled signal to a receiver with a copy protection data signal as a single signal (Claim 3). It is respectfully submitted that on page 13 and/or figure 1.6, Menezes does not show, suggest or mention sending encryption key (keying data) over the unsecured channel between sender Alice and receiver Bob as a single signal. The Applicant is unable to find the information that the Patent Office is relying upon in Menezes, which suggests that encryption keys are sent to the receiver Bob along with the encrypted data over the unsecured channel.

The Office Action's suggestion that "... it is well known that in order to encrypt the

data, it must be combined with the data in an encryption fashion”, in order to show transmitting the single signal in Claim 3, is respectfully traversed. Encrypting data using a key and sending the encrypted data as a single signal, is not the same as combining a signal that represents the encrypted data, and another signal that represents the keys, into a single signal, and then transmitting that single signal according to the present invention.

The single signal combining step in Claim 4 is for combining a first signal (i.e., an encoded, copy protected and scrambled signal) with a second signal (i.e., copy protection data signal) into a single signal. This single signal is then sent to a receiver that then retrieves the first and second signals from the single signal, wherein the information from the second signal is used to remove the copy protection from the first signal. The Office Action’s reference to the “last paragraph” in col. 3 of Muratani that discusses “keying data being transmitted with other data” cannot be located by the Applicant. Indeed, there is no signal combining step (Claim 4) shown in the references.

Despite the Patent Office’s suggestion, it is respectfully submitted that there is no disclosure or suggestion in the references, alone, or in combination, to receive encrypted data and encryption keys as a single signal, and to then (1) recover said keys from the single signal, (2) recover said encrypted data from the single signal, and (3) use the recovered keys to decrypt the recovered encrypted data.

The references, alone or in combination, do not disclose or suggest limitations of Claims 5-7, wherein said single signal (i.e., an initial digital signal that is processed into an encoded, copy protected and scrambled signal (first signal) combined with a copy protection data signal (second signal) into the single signal) is received and (1) first the copy protection data signal (second signal) is removed, then (2) the scrambled signal (first signal) is recovered and descrambled to regain the copy protected signal, (3) the copy protected signal is reconverted to the encoded signal by inverse copy protection using the stored copy protection data, and (4) the encoded signal is decoded to recover said initial digital signal.

There is no disclosure in the references, alone, or in combination, to receive encrypted data and encryption keys as a single signal, and then to recover the keys from the single signal and then recover the encrypted data from the single signal, and then use the recovered keys to decrypt the recovered encrypted data.

There is no suggestion or motivation to combine the references. In fact, the references themselves make their combination unwarranted. Muratani does not need to perform multiple encryption. The receiver 50 of Muratani receives a pre-scrambled signal, and re-scrambles it once internally before sending to the security module 70. Wherein the module 70 descrambles that signal according to the pre-scrambling algorithm and sends back to the receiver 50 to descramble according to the re-

scrambling algorithm. There is no use or motivation in the receiver 50 and module 70 of Muratani to scramble more than once as the Patent Office suggests, and the Patent Office has not provided a motivation for doing so. As such, it is respectfully submitted that rejection of claims 2-7 should be withdrawn.

Regarding claims 8-14, the references do not disclose the claimed system. For example, the references, alone or in combination do not disclose or suggest said encoder, converter and scramble in Claim 8. There is no disclosure of a step or device for recovering and saving copy protection data that is then used by a reconverter to reconvert a copy protected signal. Nor are the other components of the copy protection system in claims 9-14 shown or suggested by the references, alone, or in combination. The reasons presented above, with respect to claims 1-7, are incorporated here by reference, in traversing the rejection of claims 8-14.

Regarding Claim 15, it is respectfully submitted that there is no disclosure in the references, alone, or in combination, of a system with the specified components, that receives copy protected signal and copy protection data as a single signal, and then (1) recovers copy protection data from the single signal, (2) recovers said copy protected data from the single signal, and (3) uses the recovered copy protection data to reconvert the copy protected data.

The references, alone or in combination, do not disclose or suggest a system

according to the present invention that receives a single signal (i.e., an initial digital signal that is processed into an encoded, copy protected and scrambled signal (first signal) combined with a copy protection data signal (second signal) into the single signal), and then processes the received signal such that: (1) the copy protection data signal (second signal) is removed, (2) the scrambled signal (first signal) is recovered and descrambled to regain the copy protected signal, (3) the copy protected signal is reconverted to the encoded signal by inverse copy protection using the stored copy protection data, and (4) the encoded signal is decoded to recover said initial digital signal.

For example, a processor 210 (or such a function) shown in FIG. 2 and described in the patent application, for removing the copy protection data signal (second signal) from the single signal, storing copy protection data represented by the copy protection data signal, and extracting the scrambled signal (second signal) from the single signal to provide to a descrambler (e.g., Claim 15(b)(2)) are not shown or suggested by the references, alone or in combination.

As discussed above, Menezes in figures 1.6, 1.7, or elsewhere does not show or suggest such a function, nor is such a function obvious to one of ordinary skill in the art as the Patent Office suggests. There is no motivation or suggestion in the cited references, nor suggested by the Patent Office, to provide such a function. The Patent Office's suggestion that a descrambler performs the same function as processor 210 is



respectfully traversed, as clearly the processor 210 and a descrambler perform different functions as described above.

Regarding claims 17-18, the Patent Office has not provided a reference suggesting such limitations, and it is respectfully submitted that such limitations are not obvious to one of ordinary skill in the art. As such, it is respectfully suggested that rejection of claims 15-18 be withdrawn.

Rejection of claim 20 is respectfully traversed because the references do not show or suggest the limitations of claim 20. For example, the references, alone or in combination, do not show or suggest: Receiving a scrambled audio-visual digital signal in a receiver, transmitting the scrambled digital signal to a descrambler module and descrambling the scrambled digital signal in the descrambler module to generate a descrambled signal, generating a copy protection data signal and converting the descrambled signal into a copy protected signal in the descrambler module using the copy protection data signal. Then sending the copy protected signal from the descrambler module to the receiver, where it is reconverted to the audio-visual signal by an inverse copy protection function using the copy protection data signal.

Further, for example in Muratani, despite the Patent Office's suggestion, there is no copy protection function, scrambling or encryption of any sort taking place in the security module 70. The module 70 only descrambles a scrambled signal provided to it

by the receiver 50.

Further, in Muratani, the same receiver 50 provides encryption keys (circuit 62), and performs the symmetric scrambling (circuit 54) and descrambling (circuit 56) functions using the encryption keys from circuit 62, therein. Whereas in the claimed invention, shown by example 3 in FIG. 3, the receiver 302 performs no scrambling of the incoming signal. Rather, the incoming signal is routed to the descrambler module 304 where it is descrambled by a descrambler circuit 308. Further, although the receiver 302 generates the copy protection data signal, that data signal is provided to the descrambler module 304 to perform the copy protection function (F) on the descrambled signal therein. Then, the copy protected signal is routed to the receiver 302, wherein the inverse copy protection function is performed using the copy protection data signal.

In Muratani, the signal passed from receiver 50 to the module 70 is first scrambled by circuit 54 in the receiver 50. Whereas in the claimed invention, the signal from the receiver to the descrambler is not scrambled in the receiver before being passed to the descrambler module.

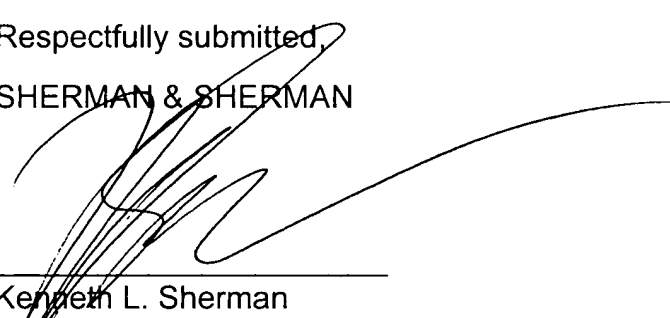
Such limitations, are not shown or suggested by the references, alone or in combination, nor are they obvious to one of ordinary skill in the art. Therefore, it is respectfully submitted that the rejection of claim 20, and all claims dependent

therefrom, should be withdrawn.

The rejection of claims 28-32 is traversed, and it is respectfully submitted that for the above reasons, the rejection of system claims 28-32 should be withdrawn.

If the Examiner believes a telephone interview will help further the prosecution of this case, Applicants respectfully request that the undersigned attorney be contacted at the listed telephone number.

Respectfully submitted,  
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